

Engineering @McLennan

Volume 4

www.mclennan.edu/engr

August 2016

What's Happening

This year marks the completion of the seventh year since MCC rebooted its engineering program, and we could not be more proud of our students, alumni, and faculty. All of our students from that first year in 2009 have since graduated with four-year engineering degrees and several are in graduate school. We have placed a third student in the highly competitive National Institute of Standards and Technology research program (more on the following pages), and an unprecedented number of our students are landing relevant jobs and internships, thanks to our relationships with local engineering companies and other outreach efforts. Our partnerships with interdisciplinary travel courses have been so successful that we will be venturing on our engineering-only travel course to London, Bath, and Edinburgh in May 2017.

We have reaffirmed our transfer agreements with Texas Tech and Tarleton and have signed a brand new agreement with Baylor, allowing our students even more flexibility in choosing a transfer institution. Four engineering students traveled to the Mars Desert Research Station in Hanksville, Utah this year to conduct independent research. Two of those students developed a full VR simulation of the habitat and its surroundings with Blender and Unity, for use with the Oculus Rift (way to go Beechner and Hartman!).

We were also very excited to partner with Maker's Edge this year. The DIY prototyping studio and makerspace became the place to be, not coincidentally right around project due dates! With a full woodshop, metal shop, and digital fabrication shop, our students have never had a better opportunity to learn the practical skills to perfectly complement their classroom work. Several of our students were also fortunate enough to land internships over the summer and have been conducting DIY camps for local youth, such as Zombie Apocalypse Preparedness and Makerstyle Wearables and Electronics.



Engineering Abroad

For the second year, engineering students traveled to Australia and New Zealand to apply concepts of Engineering Economics and conduct independent research overseas. The trip included a midnight tour of the Sydney Harbour Tunnel when it was closed for maintenance, a tour of the Wairakei Geothermal Power Station, and a behind-the-scenes tour of both the Sydney railway system and the world-famous Kelly Tarlton's Sea Life Aquarium. In addition, the 18-day tour included more general-interest sites such as Hobbiton, the Sydney Opera House, and Rotorua where students went ziplining. Some students even braved whitewater rafting, night canyoning, and a jump off the tallest tower in the Southern Hemisphere - Auckland Sky Tower. The students compiled their research and experiences into a travel guide, *When Nerds Travel in Packs: Sydney, Auckland, and Rotorua*, which is available on Amazon.com. For the spring 2017 semester, the engineering department will head to London, Bath, and Edinburgh – we can't wait!

MCC Raises \$1000 for McLane Scott & White Hospital as part of the Children's Miracle Network

Last November the Engineering & Physics Club hosted Extra Life, a 24-hour gaming marathon to raise money for the Children's Miracle Network. We chose McLane Children's Scott & White Hospital - Temple to receive our funds.

Attendance was a great mix of students from across campus, including both engineering and non-engineering students. Some participants brought laundry baskets full of gaming consoles (Xbox, PlayStation, Wii), board games, and card games. There was even a team of students doing research on gaming culture.

Student organizers James Cody and Jonathan Beechner did a great job getting everything together, and everyone had a blast! In total, our group raised over \$1000 to support McLane Children's, which put us in the top 15% of all teams. This was a fantastic success, and we will be hosting a similar event this year.

MCC Engineering Volunteers at University Rover Challenge

This year, students from the Mars 101 program were invited to serve as staff for the 2016 University Rover Challenge (URC), held at the Mars Desert Research Station in Hanksville, Utah. URC is the world's premier robotics competition for college students. Held annually in the desert of southern Utah, URC challenges student teams to design and build the next generation of Mars rovers that will one day work alongside astronauts exploring the Red Planet. URC was launched in 2006, with competitions being held every summer since 2007. URC consistently draws an international field of the most talented and promising students around. This year, 30 teams were selected to compete at MDRS from a pool of over 60 applicants from some of the most prestigious universities in the world. MCC students and faculty helped with judging, time-keeping, and event logistics.

The best part was that our students had the opportunity to network with engineering students from all around the globe and learn about rover design and construction principles. All of our students left the event hoping to join robotics teams at the four-year colleges to which they are transferring and hope to compete in URC someday!

For more information, you can visit the URC website and Facebook page: <http://urc.marssociety.org/>.



Where Are They Now?

Mark Berry (CE, UT Arlington, 2015) is finishing his Master's of Engineering in Civil Engineering in Water Resources, Hydraulics while working in Austin for TxDOT. He has his eyes on a Ph.D. program in the near future. His family has grown now to three boys, so he definitely has his hands full.

Keith Geisler (ME, Texas Tech 2016) landed a job at LyondellBasell and will be getting married in October. Double congratulations!

Ryan Mezynski (ME, Texas A&M, 2015) continues to enjoy his work as a design and production engineer for a defense company.

Colin Mocek (AE, Texas A&M, 2016) is working with Textron Aviation in Wichita, Kansas, in the flight-test engineering department.

Michael Monell (ME, Texas Tech, 2016) has started a side business, M Squared Custom Silver, where he makes western jewelry, buckles, and more!

Francisco Ramirez (ME, Texas Tech, 2015) is working for the Department of Energy.

J.W. Balch (CE, Texas Tech) spent this past summer working for the U.S. Army Corps of Engineers.

Zak Fyke (CS, Texas Tech) accepted a research position at University College

Dublin this summer working with recommender systems, a subfield of artificial intelligence. He has one more year at Texas Tech and has plans to apply for a doctoral program in Alabama.

James Grisham (AE, UT Arlington) has a year remaining in his PhD program, having just passed his comprehensive exams. He earned both the Texas Space Grant Consortium's Graduate Fellowship and the Lockheed Martin Missiles and Fire Control Fellowship. It was no shock to learn he completed all his doctoral coursework with a 4.0 GPA.

Chris Garland (ChemE, Texas Tech) plans to graduate in May and added a minor in bioengineering. He still interns at Caprock Manufacturing.

Kyle Flaherty (EE, A&M) is working as a co-op at L3 in Greenville in power engineering with plans to transition into radio systems.

David Moran (ME, Arizona State) is wrapping up his second rotation as a NASA Pathways Co-op at Marshal Space Flight Center in the Materials Test Branch. He's still skydiving with plans to begin BASE jumping this fall.

Zach Ratliff (CS, A&M) enjoyed his second summer at NIST and hopes to present his research in combinatorial software testing at a conference in Ottawa this fall. After winning second place in a nationwide NIST software contest last year, we are certain that his paper will be a hit!

Karen Sanchez (CE, Texas Tech) misses

the sights of New Zealand but is looking forward to her new adventure in Lubbock.

Kensey Schretlen (MTH, Texas Tech) is continuing her internship at URENCO USA.

Eskindir Abebe (EE, Texas Tech)

Jonathan Beechner (EE, Texas A&M)

Daniel Bullard (ChemE, Texas A&M)

James Cody (EE, Texas Tech)

Dylan Drapela (ME, Texas Tech)

Jaxom Hartman (EE, Texas Tech)

Jeremy Holt (EE, Texas Tech)

Jacob Lockhart (MET, Tarleton)

Eric McLean (ME, Texas Tech)

Luis Munoz (ME, Texas Tech)

Sam Parker (PE, Texas Tech)

Karen Rucker (EE and AP, Texas Tech)

Key

AE	Aerospace Engineering
AP	Applied Physics
CE	Civil Engineering
ChemE	Chemical Engineering
CS	Computer Science
EE	Electrical Engineering
ME	Mechanical Engineering
MET	Mechanical Engineering Tech
MTH	Mathematics
PE	Petroleum Engineering

Volunteering and Outreach

Even though our students stay pretty busy with their course assignments, tests, and projects, many make time to participate in great volunteer and outreach opportunities in our community. Our students know just how important it is to give back and to get kids excited about STEM fields early on! This year, MCC Engineering was invited to participate once again in events such as Waco S.T.E.A.M Day, the Girl Scouts' STEMfest, and help out with BEST Robotics. Additionally, our students got involved with Engineers Without Borders' Heart of Texas Professional Chapter and had a booth at the Science Fest within the Waco Cultural Arts Fest.





Civil Engineering students practice proper surveying techniques with City of Waco's Public Works employees.



Freshman student Victoria LaBarre poses with her Barbie-rescuing Mars rover that she built as a Mars 101 researcher.



Sam Parker and Joe Bondeson display their school spirit and their team's Rube Goldberg machine at MCC Scholar Day.

Scholarship Opportunities

McLennan Engineering continues to offer merit-based scholarships for students planning on completing their engineering degree at MCC. If you have a 3.0 GPA or higher in high school math and science courses and can complete the program within two years, you may be eligible for up to \$2500 per year to pursue your studies at MCC! For more information, email engr@mclennan.edu.

McLennan Engineering continues to offer merit-based scholarships for students planning on completing their engineering degree at McLennan. If you have a 3.0 GPA or higher in high school math and science courses and can complete the program within two years, you may be eligible for up to \$2500 per year to pursue your studies at McLennan. For more information, email engr@mclennan.edu.

Student Spotlight



This year, McLennan Engineering sent its third student to the SURF (Summer Undergraduate Research Fellowship) program at the National Institute of Standards and Technology in Boulder, Colorado. Karen Rucker joined students from all over the country as part of an elite research team. As the only community college student in attendance at SURF Boulder, Karen worked with some of the nation's top engineers in the field of Public Safety Communications Research. In Karen's own words:

"My project this summer was to analyze timing latencies in Project 25 (P25) land mobile radios utilized by the Public Safety community. I had to learn how to calculate attenuation, and use an oscilloscope, a signal generator, and various radio frequency equipment, like directional couplers and RF detectors. It was really interesting having to construct testing set ups from circuit block diagrams."

Karen credits her extensive presentation experience from classes at McLennan as essential to helping her prepare for the end-of-summer colloquium, particularly her numerous projects presented at various Scholar Days.